



# Crosstalk

SPONSOR	Lt. Col. Joe Jarzombek
PUBLISHER	Reuel S. Alder
ASSOCIATE PUBLISHER	Tracy Stauder
EDITOR IN CHIEF	Brent Baxter
SENIOR EDITOR	Sandi Gaskin
MANAGING EDITOR	Kathy Gurchiek
ASSOCIATE EDITOR/LAYOUT	Heather King
ASSOCIATE EDITOR/FEATURES	Heather Winward
VOICE	801-775-5555 DSN 775-5555
FAX	801-777-8069 DSN 777-8069
E-MAIL	crosstalk@stsc1.hill.af.mil
STSC ONLINE	http://www.stsc.hill.af.mil
CROSSTALK ONLINE	http://www.stsc.hill.af.mil/Crosstalk/crosstalk.html
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**Subscriptions:** Send correspondence concerning subscriptions and changes of address to the following address:

Ogden ALC/TISE  
7278 Fourth Street  
Hill AFB, UT 84056-5205  
E-mail: custserv@software.hill.af.mil  
Voice: 801-775-5555  
Fax: 801-777-8069 DSN 777-8069

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## The Acid Test: Measuring Your Success

How do you measure success? How do you know if you are a successful software engineer? What's the yardstick—cost, schedule, defects, time out of meetings, pizzas devoured per project? What is the ultimate measure for defense software engineers?

In other professions, it seems the ultimate measure is more definitive. For Lucas and Spielberg, it is ticket revenue, despite the spiel you hear about artistic satisfaction and golden statues. For O'Neil and Malone, it is a ring like Mike's. For Woods, Duvall, and Olazábal, it is the green jacket that only a valet would wear. For Armstrong and the cast of thousands at NASA, it was that "small step for mankind."

It is interesting that those who excel in their profession have one ultimate goal or measure that directs, motivates, and defines their success. A measure that eclipses all others. It is often referred to as the show, the dance, the big enchilada, the bottom line, or as my chemistry teacher put it, "the acid test."

Measures necessary in preparation, guiding, and managing a project are fruitless if you fail the acid test. Duke's individual and team statistics, although superior, have no luster compared to Connecticut's Championship Trophy. If Star Wars movies languished at the box office in the '70s, there are no sequels, prequels, or Lucas Films, and we would not be experiencing the magic of "The Phantom Menace" in theaters today. Likewise, in defense software engineering, cost, schedule, defects, and that Holy Grail called capability maturity pale in importance to customer satisfaction.

Who are our customers? What satisfies them? What is our acid test? We are in the defense industry. Our customers are warriors. Their satisfaction is the ability to accomplish their mission. Their current mission, our acid test, is occurring in the Balkans and reported on the front pages of many publications in America. How are you doing?

Those who supply A-10 pilots with Global Positioning System (GPS) receivers received their report card from the Balkans. It appears their customers decided to use their own funds to purchase off-the-shelf GPS receivers. They included them in their survival gear and attached them to their cockpits with Velcro. Why? Because the government-furnished Combat Survivor Evader Locator (CSEL) radio, hailed by the Department of Defense as a "success story," is not available. Nice acronym, acid test failed.

What is more disturbing are the excuses offered in the March 29 issue of *Federal Computer Week*. CSEL defenders warned against the use of commercial GPS equipment because the systems may not be reliable, are susceptible to jamming, and have no protection against spoofing. True, but at least it is in the dance! Pilots have spoken; they would rather go to war with a GPS receiver susceptible to jamming than a nonexistent CSEL.

This happens with software, too. When I was designing operational flight programs for the F-16 Fighting Falcon, mission-planning systems were being introduced to reduce time and errors in flight planning. The program office's solution for these mobile planning systems resembled Molly Brown's steamer trunk with the mobility of a beached whale. A pilot from the Air Force Reserve took a laptop computer, commercial database, and a C compiler and prototyped a system that ran circles around the current system in mobility, functionality, and usability. The program office lodged complaints about susceptibility, survivability, and reliability. Regardless, the pilot shed light on a design that reached beyond the drawing board and into the reality of war. He understood the acid test.

How is your report card from the Balkans? Is your customer satisfied? How do you know? Are you collecting customer feedback from the Balkans? It is a good thing you cannot Velcro software to a cockpit.

—Gary Petersen, TRI-COR Industries

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